

Patent Claims

1. Structured pre-form bodies as panel lining for wide-band sound absorption, consisting of open-cell foamed material having a rigid carcass co-vibrating in a resonant manner at low frequencies, **characterised in** that a columnar structure is positioned directly in front of or on a plain base layer (1) on the wall side, that presents a carcass resonance adjustable as a function of the parameters of the layer, which columnar structure has a non-symmetrical distribution of height and cross-section in the manner of a wide-band tuned moderator gap, wherein the columnar height corresponds approximately to the density of said base.
2. Structured pre-form bodies as wall lining for wide-band sound absorption according to Claim 1, **characterised in** that said pre-form bodies consist of a melamine resin foam or are partly made of melamine resin form.
3. Structured pre-form bodies as wall lining for wide-band sound absorption according to the Claims 1 to 2, **characterised in** that said columns (2) present a one-side bevel cut (3) on the room side and said moderator gap presents a one-side bevel cut on the base side.
4. Structured pre-form bodies as wall lining for wide-band sound absorption according to Claim 3, **characterised in** that the orientation of said bevel cuts (3) alternates in the vertical and/or horizontal direction.
5. Structured pre-form bodies as wall lining for wide-band sound absorption according to the Claims 3 or 4, **characterised in** that said bevel cuts (3) on the room side are shortened and flattened, e.g. by up to 30 mm.
6. Structured pre-form bodies as wall lining for wide-band sound absorption according to any of the Claims 1 to 5, **characterised in** that said bevel cut (3) is provided at an angle of roughly 35° relative to the plane of the wall.

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7. Structured pre-form bodies as wall lining for wide-band sound absorption according to any of the Claims 1 to 6, **characterised in** that said cuts (3) present a partially plane support of acoustically transmissive plain covers (6) made of non-woven or woven material or soft cellular material.

8. Structured pre-form bodies as wall lining for wide-band sound absorption according to any of the Claims 1 to 7, **characterised in** that perforated panels are provided in front of said lining for the mechanical protection of the lining, which are fastened to the wall of the room by means of spacers.

9. Structured pre-form bodies as wall lining for wide-band sound absorption according to any of the Claims 1 to 8, **characterised in** that said pre-form bodies are designed to be self-supporting by the selection of their material and/or their shape.

10. Structured pre-form bodies as wall lining for wide-band sound absorption according to any of the Claims 1 to 9, **characterised in** that said base layer (1) is fastened on the vibrating metal sheets of composite panel resonators (4) on their rear side by means of an adhesive bond, with a lateral spacing of roughly 200 mm being provided between said vibrating metal sheets.

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